

Claim 8, the only independent claim in this application, has been rejected as being obvious over Smith (U.S. Patent No. 5,018,450) in view of Bush (U.S. Patent No. 4,505,200). The patent to Smith discloses a projectile with two compartments, each of which contains a chemical substance. The chemical substances react in chemiluminescence upon impact of the projectile on a target. This patent is discussed on page 1 of this application, paragraph 3.

Also discussed on page 2, first paragraph, is the published German Patent Application No. 1,199,600.

According to this second reference, the projectile bursts immediately after leaving the barrel due to the high acceleration. This will cause the practice projectile to come apart and to eject from the muzzle of the barrel a mushroom-shaped cloud of smoke which is visible from a great distance.

The U.S. Patent 4,505,200 of Bush discloses a projectile with several compartments in which chemically reacting substances are contained. The compartments are separated by two membranes 22; between these membranes is positioned a torus 14 in form of a hollow O-ring which is filled with a deformable filler material, for example,

mercury, sand or small size spherical lead shot having a density greater than that of the liquid substances in the compartments. When the projectile is fired through a rifled gun, the rotation or spin of the projectile causes a centrifugal force on the filler material to increase the radial pressure outwardly against the torus thereby to deform or distort the torus axially (as shown in Figure 3). By the deformation of the torus 14 the membranes are destroyed so that the chemical substances in the two compartments are mixed.

An essential feature of Bush is that the chemical substances are toxic (not chemically reacting to cause an optical marking). Therefore, the torus of Bush is adapted to seal the projectile so that the toxic substances do not escape from the projectile during its flight. Upon impact of the projectile, an explosive charge ejects the toxic substances through the rear of the projectile, thereby dispersing the toxic liquid into the air stream.

Consequently, the patent to Bush is quite far afield from the present invention, as recited in claim 8.

In addition, it is believed the Examiner has overlooked an important feature of the present invention; namely, that the hood of the projectile is formed of an optically

transparent material to enable the trajectory of the projectile to be tracked (see the last three lines of claim 8). This enables the marking to be perceived along the entire trajectory of the practice projectile. This feature is neither disclosed by Smith and/or Bush nor in any other reference cited by the Examiner. As a result of this feature, a military officer may teach a practicing soldier, for example, to correct the position of the gun for the next shot, and so on.

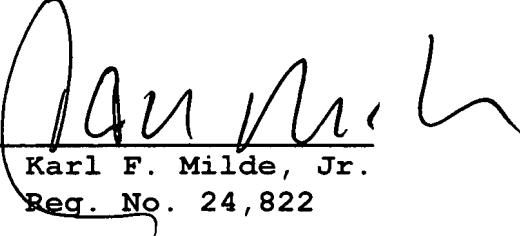
The other references cited by the Examiner disclose projectiles for marking persons or other targets by means of a colored substance. According to the U.S. Patent No. 5,639,562, the marking substance is contained in a compartment made of a polymer such as polystyrene. The projectile is a typical paint ball and it is not intended to track the trajectory of the paint ball.

U.S. Patent No. 4,706,568 discloses a projectile with substances which chemically react to produce an optical marking. The projectile bursts upon impact whereby the optical effect marks a target area. No means are provided to track the trajectory of the projectile.

U.S. Patent No. 3,764,796 discloses a typical and known chemical lighting device which has nothing to do with the subject matter of the invention.

Since the only informalities outstanding in this application have been removed by this Amendment, and since the independent claim 8 (and accordingly its dependent claims 9-11) distinguishes patentably over all of the references of record, this application is believed to be in condition for immediate allowance. A formal Notice of Allowance is accordingly respectfully solicited.

Respectfully submitted,

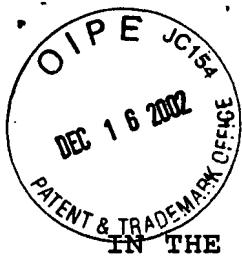
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20231  
on 12-10-02  
MILDE & HOFFBERG, LLP  
By Opalenn G. Gandy  
Date 12-10-02



VERSION TO SHOW MARKINGS OF CHANGES MADE

IN THE SPECIFICATION (AMENDED VERSION) :

On page 5, line 13, change "cases," to -- embodiments (Fig. 1 and Fig. 2), -- and line 14, delete "(not shown)" and insert -- Such breaking points are shown as thin regions in Fig. 1. --.

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IN THE CLAIMS:

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**GROUP 3600**

Please amend claims 8 and 11 as follows:

8. (Once Amended) In a practice ammunition projectile comprising a head designed to burst when the projectile strikes a target and to receive a marking agent optically indicating the impact after the head has burst, said marking agent contained in a burstable hood at the head of the practice projectile and comprising a plurality of chemical components each received in a separate frangible compartment, said components being mixed and reacting chemically with each other as the compartments break up, causing the optical marking reaction to be produced, the improvement wherein the compartments are adapted to be

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broken up by at least one of the initial acceleration and the centrifugal forces on the projectile when in use, and wherein the hood is formed of an optically transparent material to enable the trajectory of the [practice] projectile to be tracked.

11. (Once Amended) Practice ammunition projectile as in claim 8, wherein the compartments are separated by partitions[,] and said partitions [having] have predetermined breaking points therein.

IN THE ABSTRACT OF THE DISCLOSURE:

Please amend the Abstract of the Disclosure to read as follows:

On line 6, delete ", 11, 12"; lines 7 and 8, delete ", 10, 12" and line 9, delete ", 10, 12".